ENHANCED SELECTIVITY FOR EPITAXIAL DEPOSITION

Abstract of the Disclosure

A method of forming an electronic component having elevated active areas is disclosed. The method comprises providing a semiconductor substrate in a processing chamber. The semiconductor substrate has disposed thereon a polycrystalline silicon gate and exposed active areas. The method further comprises performing a deposition process in which a silicon-source gas is supplied into the processing chamber to cause polycrystalline growth on the gate and epitaxial deposition on the active areas. The method further comprises performing a flash etch back process in which polycrystalline material is etched from the gate at a first etching rate and the epitaxial layer is etched from the active areas at a second etching rate. The first etching rate is faster than the second etching rate. The deposition process and the flash etch back process can be repeated cyclically, if desired. In certain other embodiments, the deposition process is a selective epitaxial deposition process, wherein growth occurs in non-oxide regions, but not in oxide regions.

PATENT